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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,262	02/19/2002	Min-Goo Kim	678-809 (P10177)	9091
28249	7590	05/10/2006	EXAMINER	
DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			WILLIAMS, LAWRENCE B	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/080,262

Applicant(s)

KIM ET AL.

Examiner

Lawrence B. Williams

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-26 and 34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-26, 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claim 10 is objected to because of the following informalities: The examiner suggests applicant change the word "streams" to "stream" in line 7.

Appropriate correction is required.

2. Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 12 merely reiterates the last section of claim 10.

3. Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 20 merely reiterates the last section of claim 18.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 10-17, 34 are rejected under 35 U.S.C. 112, second paragraph. Claim 10 recites the limitation "the received symbols", "the matched parity symbol streams", "the independently

Art Unit: 2611

interleaved parity symbol streams” in lines 3, 6, and 10-11, respectively. There is insufficient antecedent basis for these limitations in the claim.

6. Claims 13-17 are rejected under 35 U.S.C. 112, second paragraph. Claim 13 recites the limitation "the starting position" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim. Examiner suggests “ a starting position”.

7. Claims 16-17 are rejected under 35 U.S.C. 112, second paragraph. Claims 16-17 recites the limitation "wherein the combination is a soft combination”, “wherein the combination is a hard combination” in lines 1-2, respectively. There is insufficient antecedent basis for this limitation in the claim. Examiner suggests, “ wherein the combining is a soft combining”.

8. Claims 18-26 are rejected under 35 U.S.C. 112, second paragraph. Claim 18 recites the limitation "the received symbols", “the independently interleaved parity symbol streams” in lines 3 and 9, respectively. There is insufficient antecedent basis for these limitations in the claim.

9. Claim 19 is rejected under 35 U.S.C. 112, second paragraph. Claim 19 recites the limitation "the respective parity symbol streams", “the respective information symbol stream” in lines 6 and 8, respectively. There is insufficient antecedent basis for these limitations in the claim.

***Claim Rejections - 35 USC § 103***

Art Unit: 2611

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 10, 12-14, 18-22, 34 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hinedi et al. US Patent 6,202,189 B1).

(1) With regard to claim 10, Hinedi et al. discloses in Fig. 5, an apparatus for receiving a quasi-complementary turbo code (QCTC) and decoding the QCTC, comprising; a combiner (47) for sequence combining the received symbols (though Hinedi et al. is silent as to the use of the word "sequence", it would be inherent to one skilled in the art that the information/data symbols and parity symbols would be combined according to some predetermined sequence); a channel de-interleaver (elements 50, 51) for separating the combined symbols into an information symbol (Data) stream and parity (Parity) symbol streams, demultiplexing the parity symbol streams into at least one parity symbol streams according to a given code rate, and independently de-interleaving and outputting the information symbol stream and the demultiplexed parity symbol streams; and a turbo code decoder (element 43) for multiplexing the independently (combiner, element 53) interleaved parity symbol streams and the information symbol stream, after decoding the multiplexed streams according to a predetermined decode rate (col. 10, lines 3-39). and outputting (Decision) the information symbol stream.

(2) With regard to claim 12, claim 12 discloses the limitation of the last section of claim 10. Therefore a similar rejection applies.

Art Unit: 2611

(3) With regard to claim 13, though Hinedi et al. is silent as to a buffer in his combiner, but such a device would be inherent to one skilled in the art since the information/data symbols and parity bit are combined according to a predetermined code rate as is known in the art (col. 10, lines 3-24).

(4) With regard to claim 14, a starting position of insertion of the parity bits to achieve a predetermined code rate would be a design choice and thus would not constitute a patentable limitation.

(5) With regard to claim 18, claim 18 discloses the method for the apparatus disclosed in claim 10. As noted above, Hinedi et al. discloses all limitations of the apparatus disclosed in claim 10, therefore inherently discloses the method as claimed in claim 18.

(6) With regard to claim 19, Hinedi et al. also discloses in Fig. 5, separating and outputting the information symbol stream and the parity symbol streams from the combined symbols; (b) demultiplexing the parity symbol streams and separating the respective parity (Parity) symbol streams; and (c) independently de-interleaving the demultiplexed parity symbol streams and the respective information (Data) symbol stream (col. 9, lines 19-34).

(7) With regard to claim 20, claim 20 discloses the limitation of the last section of claim 18. Therefore a similar rejection applies.

(8) With regard to claim 21, though Hinedi et al. is silent as to a buffer in his combiner, but such a device would be inherent to one skilled in the art since the information/data symbols and parity bit are combined according to a predetermined code rate as is known in the art (col. 10, lines 3-24).

Art Unit: 2611

(9) With regard to claim 22, a starting position of insertion of the parity bits to achieve a predetermined code rate would be a design choice and thus would not constitute a patentable limitation.

(10) With regard to claim 34, claim 34 inherits all limitations of claim 10. Furthermore, Hinedi et al. discloses the apparatus further comprising a depuncture (element 52) for depuncturing the received symbols according to a code rate (abstract).

### *Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Knox discloses in US 5,784,388 Methods And Apparatus For Decoding Control Signals In Dispatch Trunked Radio.

b.) Bitzer et al. discloses in US Patent 5,381,425 System For Encoding And Decoding Of Convolutionally Encoded Data.

c.) Gather et al. discloses in US 6,980,605 B2 Map Decoding With Parallelized Sliding Window Processing.

d.) Hammons, Jr. discloses in US Patent 6,601,214 B1 System And Method Employing A Rate Matching Algorithm For Providing Optimized Puncturing Patterns For Turbo Encoded Data In A Communications Network.

e.) Kim discloses in US Patent 6,668,350 B1 Interleaving/Deinterleaving Device And Method For Communication System.

Art Unit: 2611

f.) Kim et al. discloses in US Patent 6,493,815 B1 Interleaving/Deinterleaving Device And Method For Communication System.

g.) Ghosh et al. discloses in US Patent 6,308,294 B1 Adaptive Hybrid ARQ Using Turbo Code Structure.

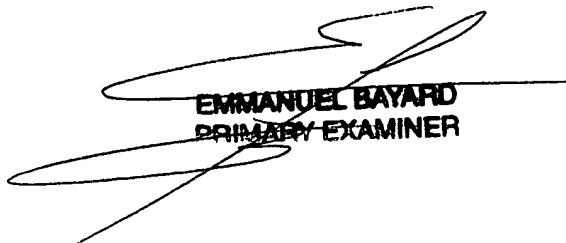
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw  
May 4, 2006

  
**EMMANUEL BAYARD**  
**PRIMARY EXAMINER**